STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **Deers Danger CH (Part A)** *Agreement #:***30-083260**

2. Name of applicant: **Department of Natural Resources (DNR)**

3. Address and phone number of applicant and contact person:
   DNR Northwest Region
   919 North Township Street
   Sedro Woolley, WA 98284
   Contact Person: Laurie Bergvall
   Telephone: 360-856-3500

4. Date checklist prepared: **10/20/2009**

5. Agency requesting checklist: **DNR**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **4/28/2010**
   b. *Planned contract end date (but may be extended):* **12/30/2010**
   c. *Phasing:* **Does Not Apply**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Timber Sale

a. Site preparation:	**Treatment to be assessed in 2-3 years.**
b. Regeneration Method:	**Hand-plant with conifer seedlings.**
c. Vegetation Management:	**Treatment to be assessed in 3-5 years.**
d. Thinning:	**Treatment to be assessed in 10-15 years.**

Roads: **See table A-11-C**

Rock Pits and/or Sale:

The MU-43 hard rock pit located in Section 16, Township 34 North, Range 5 East, W.M. will continue to be used for future forest management activities.

The MU-54 hard rock pit located in Section 21, Township 34 North, Range 5 East, W.M. will continue to be used for future forest management activities.

Onsite rock may be used for road construction, if rock sources are discovered along haul routes or within the sale area.

Other: **None**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐ *303 (d) – listed water body in WAU:* ☒ *temp* ☐ *sediment* ☐ *completed TMDL (total maximum daily load):*
☐ *Landscape plan:*
☐ *Watershed analysis:*
☐ *Interdisciplinary team (ID Team) report:*
☒ *Road design plan:* **Available at DNR Northwest Region office.**
☒ *Wildlife report:* **Available at DNR Northwest Region office.**
☐ *Geotechnical report:*
☒ *Other specialist report(s):* **Archeological Site Protection Plan.**
☐ *Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒ *Rock pit plan:* **Available at DNR Northwest Region office.**
☒ *Other:* **State Soil Survey, 1992; Forest Resource Plan & Environmental Impact Statement, July 1992. Habitat Conservation Plan & Environment Impact Statement, September 1997. Policy for Sustainable Forests, December 2006.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. **Does not apply**

10. List any government approvals or permits that will be needed for your proposal, if known.

☐ *HPA* ☐ *Burning permit* ☐ *Shoreline permit* ☐ *Incidental take permit* ☒ *FPA #* _____ ☐

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:*

Roughly 200 acres of 70-80 year-old timber in the Nookachamps WAU was considered for harvest. The stands are composed primarily of Douglas-fir , western redcedar, western hemlock, and red alder. The Deers Danger CH timber sale is a five-unit variable retention harvest that encompasses 137.6 net acres. The harvest units are surrounded by mostly state land with some private land included.

The proposal contains several Type 3 streams including the east fork of the Nookachamps, along with numerous Type 4 and Type 5 streams. It also contains a one acre wetland on the edge of Unit 5. The area will be harvested with ground-based and cable yarding equipment. There are also 8 acres of leave tree areas, 1.7 of right-of-way and 1.0

acres of right-of-way on Skagit County PUD land. Unit 2 contains a five acre cave buffer. Suitable marbled murrelet habitat was identified, delineated, and deferred from harvest adjacent to Unit 3.

Sale area:
Total # of Units: 5
Gross unit acres: 149.5
Net unit acres: 136.7, plus 1.0 acres of PUD right-of-way
Estimated Volume: 7,029 MBF
Number of Landings: ~18

Roads: See table A-11-C

Rock Pits and/or sales:

The MU-43 hard rock pit located in Section 16, Township 34 North, Range 5 East, W.M. will continue to be used for future forest management activities.

The MU-54 hard rock pit located in Section 21, Township 34 North, Range 5 East, W.M. will continue to be used for future forest management activities.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Pre-Harvest Stand Description:

- **70-80 years old**
- **110-140 feet tall.**
- **Basal areas of approximately 260-330 square feet per acre.**
- **Comprised primarily of Douglas-fir and western redcedar (Approximately 70-80% by volume).**
- **Most of the remaining volume is western hemlock and various hardwoods.**

Type of Harvest:

- **Variable retention harvest with retention of an average 8 trees per acre greater than 10 inches dbh.**
- **Ground-based and cable yarding.**

Overall Unit Objectives:

- **Generating revenue for the following state trusts: Forest Board Transfer (01), Scientific School (10), and the Common School and Indemnity (03).**
- **Protecting water quality; maintaining site productivity, and maintaining wildlife habitat through a legacy tree retention strategy.**
- **This proposal meets or exceeds all of the guidelines and prescriptions set forth in the DNR Habitat Conservation Plan, Forest Resource Plan, and Forest Practices Rules and Regulations.**

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How many	Length (feet) (Estimated)	Acres (Subgrade) (Estimated)	Fish Barrier Removals (#)	Steepest Side Slope Road Crosses
Construction		2,801	1.3		60
Reconstruction		20		0	40
Abandonment			0.4	0	--
Temporary construction		10,334	3.8		60
Bridge Install/Replace	0	--			
Culvert Install/Replace (fish)	0				
Culvert Install/Replace (no fish)	44*				

***All culverts to be installed (this includes both typed stream crossings and relief culverts).**

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description: **Township 34 North, Range 05 East, Sections 16, 17, 20, 21, and 28.**

b. RUP: **PUD land in Section 21, Township 34 North, Range 5 East.**

c. *Distance and direction from nearest town (include road names):*

The sale is located 12 miles south of Sedro-Woolley.

From Sedro-Woolley: Head south on Highway 9 for 2.6 miles. Turn left at Old Day Creek Road and follow for 2.9 miles. Turn right at Janicki Road and follow for 0.8 mile and the gate will be on the right.

From Gate to Units 1 & 2: Continue on the MU-ML for 2.2 miles. Veer right and continue for 0.5 mile. Unit 1 is to the right. Continue for 0.8 miles on the MU-22 veer left on MU-2213 and follow for 0.4 mile to Unit 2.

From Gate to Units 3, 4, & 5: Continue on the MU-ML for 2.2 miles. Veer left and continue on MU-ML for 2.3 miles and Unit 4 is west of the road. Follow for 0.7 miles and Unit 5 will be east of the road. Continue for another 0.6 mile to MU-58. Unit 3 is west of the road.

d. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
Nookachamps	46,461	136.7
Sub-basin 6	4,325	129.4
Sub-basin 8	5,393	7.3

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

General Watershed Administrative Unit (WAU) information

WAU Name	Acres	DNR-Managed Acres	Other Acres	% DNR Managed Land	% Other Land	Proposal Acres	% of Proposal in WAU
Nookachamps	**43,461**	**13,413**	**33,048**	**28.9**	**71.1**	**136.7**	**100**

The majority of the land in the WAU is designated for timber resource use and has been so historically.

Past and Future DNR Activities in WAU

DNR Managed Lands – Past and Future Harvests within the Nookachamps WAU.
The following table reports timber harvest activity in the Nookachamps WAU within the past seven years on both DNR managed lands and non-DNR lands. The data was compiled from the Department's database on approved forest practice permits. This table is based on the best available information as of November 21, 2008.

WAU	DNR harvest acres: Even-aged	DNR harvest acres: Uneven-aged	DNR harvest acres: Salvage	Non-DNR harvest acres: Even-aged	Non-DNR harvest acres: Uneven-aged	Non-DNR harvest acres: Salvage
Nookachamps	**1,064**	**79**	**15**	**1,978**	**452**	**33**

NOTE: This information is derived from activity locations collected by varying methods ranging from hand drawn maps to precise GPS collection. No verification of map accuracy or activity completion is conducted. Totals may not be the sum of all harvest types due to overlapping activities. The same land may be counted more than once if, in the past seven years, more than one forest practice application has been approved for different harvests (salvage and even age for example).

Future forest management activities in the WAU include road building, rock pit expansion, silvicultural work and timber harvesting. Activities occurring on DNR managed land will follow Forest Practices Rules, Habitat Conservation Plan (HCP) guidelines, and the Policy for Sustainable Forests – policies designed to minimize environmental impacts. Future forest management activities on privately managed, non-DNR lands will be subject to the Forest Practice Rules.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) *General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).*

The Nookachamps WAU consists of 46,461 acres of rolling foothills, occasional rock outcrops, mountainous terrain, and valley bottoms. The boundaries of the WAU follow the ridgeline created by Cultus Mountain west to Devil's Mountain. A low valley formed by the two mountains drains a series of lakes north into the Skagit River via Nookachamps Creek. Cultus Mountain is the highest point of the WAU at 4,077 feet while the Nookachamps Creek valley is near sea level. The average slope of the WAU is 35-45% and the average rainfall is 44 inches.

2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*

The proposal area is consistent with the above WAU description.

b. What is the steepest slope on the site (approximate percent slope)?

Units 4 and 5 contain areas with slopes exceeding 100%. The area in Unit 4 is a bedrock hollow with no delivery potential. Unit 5 has roughly two acres of the 100% slopes. Both areas have been visited by a state lands geologist in the field and have been deemed suitable for harvest.

d. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

All Units

State Soil Survey #	Soil Names	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
7439	Sorenson	V. Gravely silt loam	30-65	71	Medium	Medium
2875	Heisler	Gravely silt loam	30-65	15	Medium	Medium
8723	Van Zandt	V. Gravely loam	15-30	18	Insignificant	Low
8724	Van Zandt	Gravely loam	30-65	15	Medium	Medium
7508	Squires	V. Gravely silt loam	30-65	7	Medium	Medium
7400	Skiyou	Gravely silt loam	3-15	5	Insignificant	Low
1721	Dystric Xerochrepts	Gravely sandy loam	45-70	3	High	High
6771	Rock outcrop	-	50-90	3	N/A	N/A

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) *Surface indications:*

The proposed Deers Danger timber sale is situated on and adjacent to a very large, dormant, deep-seated landslide (non-glacial) on the western side of Cultus Mountain. The main head scarp is visible from some vantage points west of Cultus Mountain and in aerial photographs. Despite the lack of evidence on the ground for ongoing movement of the landslide, the head scarp and many of the minor scarps remain steep and, in some places, sparsely vegetated.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

The large, deep-seated landslide and others described above appear to be natural landslides. Movement of at least the large, deep-seated landslide overlapped by the proposed Deers Danger timber sale appears to have been post-glacial and likely well before large-scale logging efforts took place in the early part of the last century. As such, the landslide originated hundreds, if not thousands, of years ago.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

Road and timber harvest related failures have occurred in the past within the sub-basins, road-related failures being more common. However, many of these failures, in particular failures associated with old railroad grades, are associated with past road building practices where standards for construction and drainage were not as stringent as current regulations and practices by the DNR.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

There are numerous deep-seated landslides in the two sub-basins within which the proposed sale is located, but none are near the size of the large landslide overlapped by Deers Danger timber sale boundary.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

Any areas that are potentially unstable that have any potential to deliver sediment or wood debris to a public resource have been bounded out of the sale. All roads to be constructed under this proposal have been located in areas where there are no known slope stability issues. Approximately 2400 feet of road construction will be located on old roads that were previously abandoned.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **4.8** *Approx. acreage new landings:* **1.5** *Fill source:* **Native Material**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Little if any erosion will occur during road construction and log transportation activities. However, to limit the potential of erosion, prudent road construction techniques and routine maintenance practices will be employed.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

0.5% (0.8 acres) of permanent roads will remain on site. All temporary roads will be abandoned.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

All roads will be constructed to meet or exceed Forest Practices standards and the Habitat Conservation Plan guidelines. Appropriate drainage devices including proper culvert size and placement and ditching will be used as necessary to reduce surface erosion. In areas adjacent to constructed roads where soil disturbances have occurred, straw mulch, grass seed or some other appropriate measure will be used to prevent sediments from being transported.

Energy dissipaters will be installed with culverts to reduce erosion. Relief pipes will be strategically placed to reduce road ditch sediment from entering live streams. Slopes that are exposed of vegetative cover during road construction activities will be grass seeded or straw mulched to reduce sediment-laden runoff.

Ground-based harvesting will generally be restricted to the dry season and limited to slopes less than 35%. Trees will be felled away and yarded away from all streams where possible. Energy dissipaters will be installed with culverts to reduce erosion.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling*, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by log hauling activities. After harvesting, slash may be burned.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If slash is burned, it will be burned in adherence with Washington State's smoke management program.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map available at DNR region office, or forest practice application base maps.)*

a) Downstream water bodies:

East fork Nookachamps, Skagit River, and Mundt Creek.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
East Fork of Nookachamps	Type 2	1	187
Un-named stream	Type 3	2	180
Un-named stream	Type 3	1	187
Un-named stream	Type 3	1	157
Un-named stream	Type 4	14	100
Un-named stream	Type 5	10	30' Equipment Limitation Zone
Un-named wetland	Forested	1	170

c) *List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.*

- **The east fork of the Nookachamps is protected with 187-foot no-harvest buffers.**
- **All Type 4 streams are protected by 100-foot no-harvest buffers.**
- **A wetland >1 acre on Unit 5 is protected with a 170-foot. buffer that will have partial thinning beyond a 25-foot no-harvest inner core.**
- **Equipment limitation zones on Type 5 streams, except for specific crossings if needed.**
- **All existing and constructed roads through any RMZs will be monitored during hauling to ensure ditchwater and road runoff will not enter or otherwise adversely affect water quality or RMZ function. Mitigation such as straw bales, silt fencing, rock-lined ditches, and sediment traps will be installed or constructed if necessary.**
- **Ditch water will be diverted through relief culverts prior to stream crossing to keep sediment out of streams. Exposed soils will be revegetated.**
- **Construction distance of proposed roads within RMZs has been located to minimize impacts. Clearing and grubbing limits have been reduced were proposed road construction meets the definition of stream parallel road.**
- **Also see A-11-a and B-1-h.**

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)*
Description (include culverts):

New road construction will cross 10 Type 4 streams in the proposal. Ditch water will be diverted through relief culverts prior to stream crossing to keep sediment out of streams. Exposed soils will be revegetated.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒*No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) *Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?*

The sub-basin contains soils that are susceptible to surface erosion and/or mass wasting according to the state soil survey data. The soil survey data for the majority of soils on the harvest site indicate medium for mass wasting and a medium to low potential for surface erosion (See B.1.c above). Approximately 2-3 acres of the proposal are found on soil types with a high potential for mass wasting and erosion. After field reconnaissance these areas were determined to be stable and have little potential to contribute eroded material to surface water. Slopes in the proposal area are subject to local surface erosion where surface soils are disturbed. Some soil disturbance is anticipated in conjunction with yarding and road construction activities. Surface erosion control/prevention measures discussed in B.1.h. would minimize or prevent delivery to surface waters. There is little potential for eroded material to enter surface waters as a result of activities associated with this proposal.

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:*

At the WAU level, there is evidence of accelerated aggradations of channels at the base of hill slopes and channel scouring at the upper reaches of streams with changes in the quantity of large organic debris (LOD) in the channels as well as changes in the channel attributes. These changes are associated with channelized debris flows. These events have lead to local changes within the channel. There is not any evidence of significant channel movements within the proposal area.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☒*No* ☐*Yes, explain:*

The proposed harvest activity should have little effect on stream and water quality. No harvest or road building activity will take place in areas with high potential of instability.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

WAU	Road miles per square mile
Nookachamps	4.3

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

Does not apply.

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☒*No* ☐*Yes, describe observations:*

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

Slopes in all units are subject to local surface erosion where surface soils are disturbed. Surface erosion control/prevention measures discussed in B.1.h. would minimize or prevent delivery to surface waters. Due to the area being well below the ROS zone, there is little potential impact to peak flows.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒*No* ☐*Yes, possible impacts:*

Though the TRAX database report shows multiple domestic water intakes on Mundt Cree, this creek is over one mile downstream of the proposal.

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts*

This project should have minimal influence on peak flow. The project will retain trees on site (see B.4.b.2), which will assist in the continued infiltration of water during storm events, mitigating the influence of removing timber off the site. Also, all water sources >2 ft. wide were provided riparian buffers (see B.3.a.1.b above), which is a retaining of green trees in the proposal site in addition to those counted in B.4.b.2. All roads will be constructed to meet or exceed Forest Practice standards. Also, yarding and log transportation will be restricted during unfavorable weather conditions so as to reduce the potential of impacting water quality.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No ground water will be withdrawn. Water discharges will include channeled water through ditches and culverts. As this water empties out onto the forest floor, it will increase surface saturation in localized areas, but is not expected to increase ground water levels over a significant portion of the proposal area.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Small amounts of oil and other lubricants could be discharged inadvertently as a result of heavy equipment use. No lubricants will be disposed of onsite.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☒*No* ☐*Yes, describe:*
Due to the nature of resource protective measures of the proposal, there should be no measurable effect on down-slope or downstream ground water resources. See question B.3.a.14.

a) Note protection measures, if any.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff from the road surfaces will be collected in ditches and diverted to stable areas on the forest floor through the uses of ditches, culverts, and energy dissipaters.

2) Could waste materials enter ground or surface waters? If so, generally describe.

It is not anticipated that waste material will enter ground or surface water as a result of this proposal.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

Constructed ditches, cross-drain culverts, drain dips, and water bars will be used to control runoff. Straw, grass seeding, or other appropriate methods may be used on any soil exposed during the course of this proposal in order to prevent sediment movement. Roads and landings will be crowned to avoid water accumulation. Falling and yarding away from all seasonal streams will be applied when feasible. All activities associated with this proposal will meet or exceed Forest Practices standards and the Habitat Conservation Plan.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☒*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☒other: white pine
☒shrubs: ☐*huckleberry,* ☒*salmonberry,* ☒*salal,* ☐*other:*
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")*

All units are comprised of primarily Douglas-fir, western redcedar, and western hemlock. There is a small hardwood component as well made up of mostly red alder. The stand ages range from 70-80 years. All units are surrounded by DNR managed land, as well as some private ownership bordering Unit 5. Adjacent stand ages range from 5-10 year old plantations to 70-80 year old timber.

2) *Retention tree plan:*

Eight trees per acre greater than 10 inches DBH will be retained. The retention trees are both clumped into leave tree areas and marked as single leave trees. The majority of the clumps are protecting some sort of feature on the land or a structurally unique tree. Single marked trees were chosen because of either wind firmness or structural uniqueness. Western redcedar and Douglas-fir were desired candidates for leave trees. Three large western redcedar snags were protected in Unit 2.

Unit 2 contained several caves. The caves were required to have a buffer based on their size and habitat value. One high value cave required a 250-foot radius buffer, and there were some medium value caves needing a 125-foot radius buffer. Lower value caves near an RMZ needed a 30ft. buffer.

Rock outcrops were present on Units 2, 4, and 5. Some of the larger ones were completely bound out of the sale, while leave tree clumps were placed next to some of the smaller outcrops.

Edge clumps are present in all the units. All edge clumps had justification to simplify yarding or protect features such as snags and cavity trees.

c. List threatened or endangered *plant* species known to be on or near the site.

None found in search of DNR's TRAX system.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Wildlife and green retention trees will be left on site in both clumped and scattered patterns. Native conifer trees (Douglas-fir and western redcedar at 360 stems/acre) will be planted upon completion of the proposal. Soils exposed due to road construction will be grass-seeded and mulched prior to completion of this proposal. (Refer to B-4-b-2).

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:
birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon,* ☒other: barred owl
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☐other: cougar
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☒*talus slopes,* ☒*caves,* ☒*cliffs,* ☐*oak woodlands,* ☐*balds,* ☐*mineral springs*

Units 2, 4, and 5 contain rock outcrops and cliffs that have been bound out of the sale. There was suitable marbled murrelet habitat found adjacent and west of Unit 3. It has been deferred from harvest until it is surveyed for potential of occupancy can be implemented.

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

None found in search of DNR's TRAX system. Sightings of marbled murrelets have occurred in the past, according to a DNR database layer, but there are no nest areas remotely close to the proposal.

c. Is the site part of a migration route? If so, explain.
☒ *Pacific flyway* ☐ *Other migration route:* *Explain if any boxes checked:*

The entire state of Washington is considered part of the Pacific Flyway. No adverse impacts are anticipated as part of this proposal.

d. Proposed measures to preserve or enhance wildlife, if any:
Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species /Habitat:**Riparian Habitat:**

Protection Measures:

The following measures are intended to maintain watercourse temperatures, minimize disturbance to riparian vegetation, and/or minimize potential deliverables to streams: No-cut riparian buffers on Type-3 and 4 streams. Constructed ditches, cross-drain culverts, drain dips, and water bars will be used to control runoff along roads. Roads and landings will be crowned to avoid water accumulation. Straw, grass seeding, or other appropriate methods may be used on any soil exposed on cut and fill slopes during the course of this proposal in order to prevent sediment movement.

Species /Habitat:**Wildlife Habitat:**

Protection Measures:

Legacy retention trees will serve to increase varied wildlife habitat and all buffers may act as wildlife corridors. Additional cover for wildlife will be provided from the low lying branches of cedar trees in some leave tree clumps. See B.4.b.2. for retention tree plan.

All activities associated with this proposal will meet or exceed Forest Practices standards and the Habitat Conservation Plan. (See also B-1-h, B-3-a-1-b, B-3-a-1-c, B-3-d, B-4-b-2 and B-4-d)

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply

7. **Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

There is minimal hazard due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer. The timber sale contract contains language that addresses hazardous materials spill prevention; hazardous material spill containment, control and cleanup; hazardous material release reporting.

1) Describe special emergency services that might be required.

Medical services may be required in the event of an injury, and fire suppression crews may be required in the event of a fire.

2) Proposed measures to reduce or control environmental health hazards, if any:

Safe operation of all equipment will be required. Industrial restrictions and precaution levels regarding forest fire protection will be enforced. The timber purchaser will be required to have fire suppression equipment on site during the restricted fire season while harvest activity is ongoing. Also, the DNR employs seasonal fire fighting crews to reduce the response time period for the initial attack phase of wildfire suppression.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Noise from road construction and harvest activity will be present in the immediate vicinity of this proposal during operations. Noise from log hauling will be present along the haul routes during operations.

3) Proposed measures to reduce or control noise impacts, if any:

None. Noise associated with harvest and road construction activity will be minimal anywhere but in the immediate vicinity of the proposal. Harvest activity and log hauling are historic activities in the area and noise should not be present above customary levels.

8. **Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*
Current land use is forest management (timber production).

b. Has the site been used for agriculture? If so, describe.
No

c. Describe any structures on the site.
None

d. Will any structures be demolished? If so, what?
No

e. What is the current zoning classification of the site?
The current zoning classification is IF-NRL, Industrial Forest.

f. What is the current comprehensive plan designation of the site?
Current comprehensive plan designation is Industrial Forest.

g. If applicable, what is the current shoreline master program designation of the site?
Does not apply

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
No

i. Approximately how many people would reside or work in the completed project?
None

j. Approximately how many people would the completed project displace?
None

k. Proposed measures to avoid or reduce displacement impacts, if any:
None

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
This project is consistent with current comprehensive plans and zoning regulations.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Does not apply

c. Proposed measures to reduce or control housing impacts, if any:
Does not apply

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?
Does not apply

b. What views in the immediate vicinity would be altered or obstructed?

1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☐*No* ☒*Yes, viewing location:*

Small portions of Units 4 and 5 are visible from Mount Vernon and Burlington. The majority of the proposal is visible from Clear Lake.

2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☐*No* ☒*Yes, scenic corridor name:*

Portions of Units 4 and 5 are visible from I-5.

3) *How will this proposal affect any views described in 1) or 2) above?*
This proposal may in a small amount add to the existing multi-cohort landscape. There are thousands of state and private managed forestlands upslope of this proposal which have been actively managed for decades. Timber harvests on Cultus Mountain are a common and usual occurance.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Placement of leave trees was considered. Both clumped and scattered trees were placed throughout all the units. The leave trees, several RMZs, and a 5-acre cave buffer will break up the appearance of the harvested areas. Immediately planting the proposal area with conifer seedlings will help shorten the time period that the proposal will appear un-vegetated.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.

c. What existing off-site sources of light or glare may affect your proposal?
None.

d. Proposed measures to reduce or control light and glare impacts, if any:
Does not apply

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

No designated recreational opportunities currently exist. Informal use may include hunting, fishing, camping, hiking, mountain biking, and horseback riding.

b. Would the proposed project displace any existing recreational uses? If so, describe:

The road systems associated with this proposal are currently gated and closed to motorized vehicle use. Use of the proposal area by other users may be limited during the course of operations due to safety and security concerns. No permanent displacement of existing use will occur as a result of this proposal.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
Historic properties are found in the general area.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)
A site management plan is being prepared in co-operation with the Department of Archaeology and Historic Preservation and affected tribes.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
There are no public streets or highways that serve the site. There will be no addition of public roads to access the site as a result of this proposal.

1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?* **No.**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
No.

c. How many parking spaces would the completed project have? How many would the project eliminate?
None.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
No.

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*
Does not apply

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

0.04 trips per day (approximately once a month) for management purposes, for the first 5-10 years after the completion of the proposal.

g. Proposed measures to reduce or control transportation impacts, if any:

Due to the lack of impact on existing transportation, no reduction or control measures will be needed.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
No

b. Proposed measures to reduce or control direct impacts on public services, if any.
None

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
None

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
None

C. **SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: _____ Starbird Unit Forester Date: 11/4/2009
Title